MAY 2 6 2004
PATENT & TRADEMARK OFFICE

FIG. 1

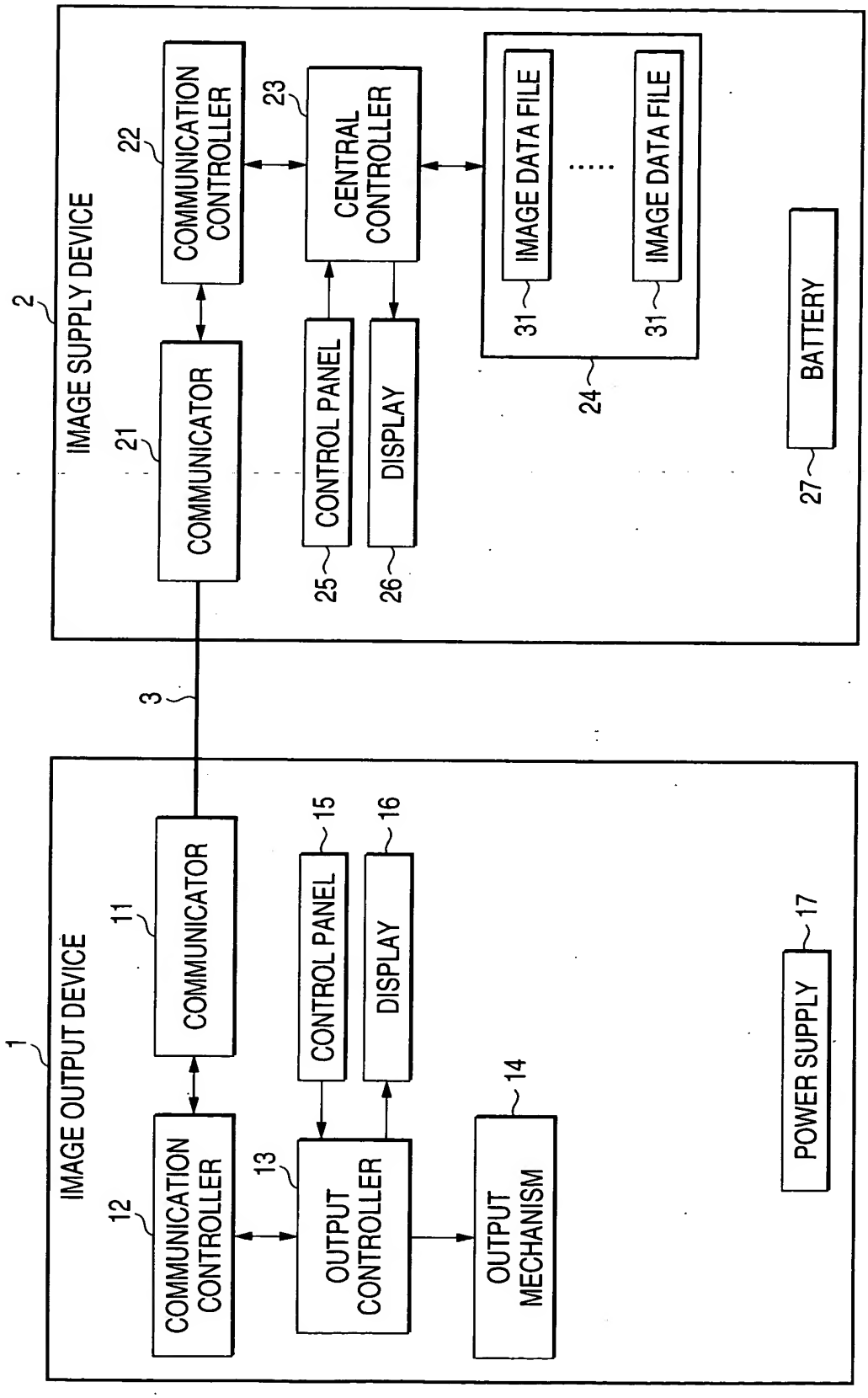


FIG. 2

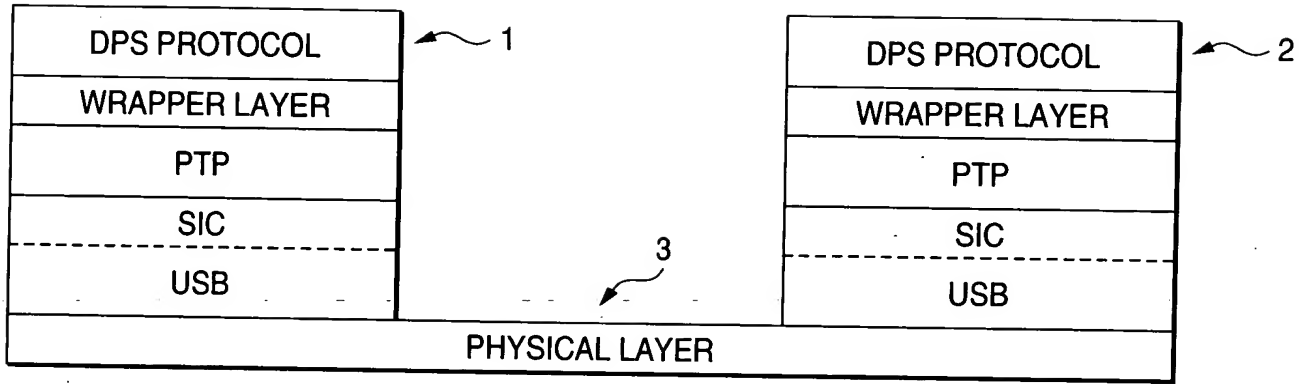

DPS PROTOCOL
WRAPPER LAYER
PTP
SIC
USB
1
3
DPS PROTOCOL
WRAPPER LAYER
PTP
SIC
USB
2
PHYSICAL LAYER

FIG. 3

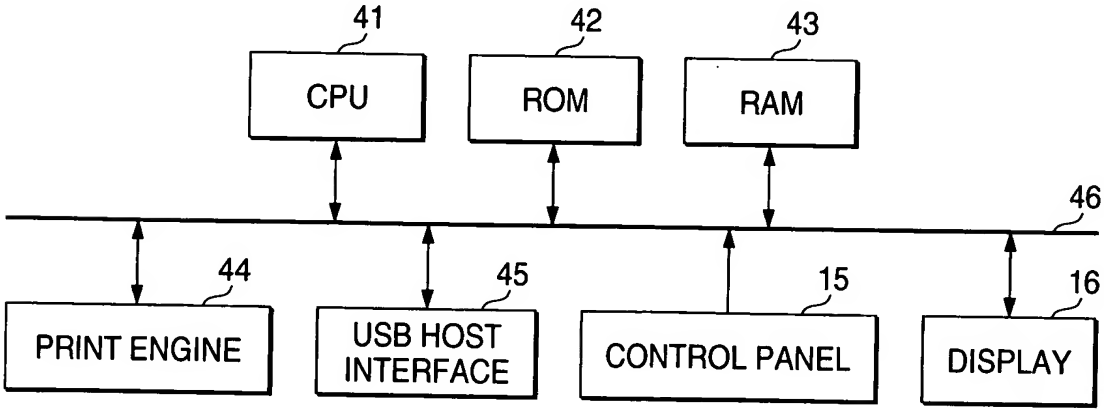

41
42
43
CPU
ROM
RAM
46
44
45
15
16
PRINT ENGINE
USB HOST INTERFACE
CONTROL PANEL
DISPLAY

FIG. 4

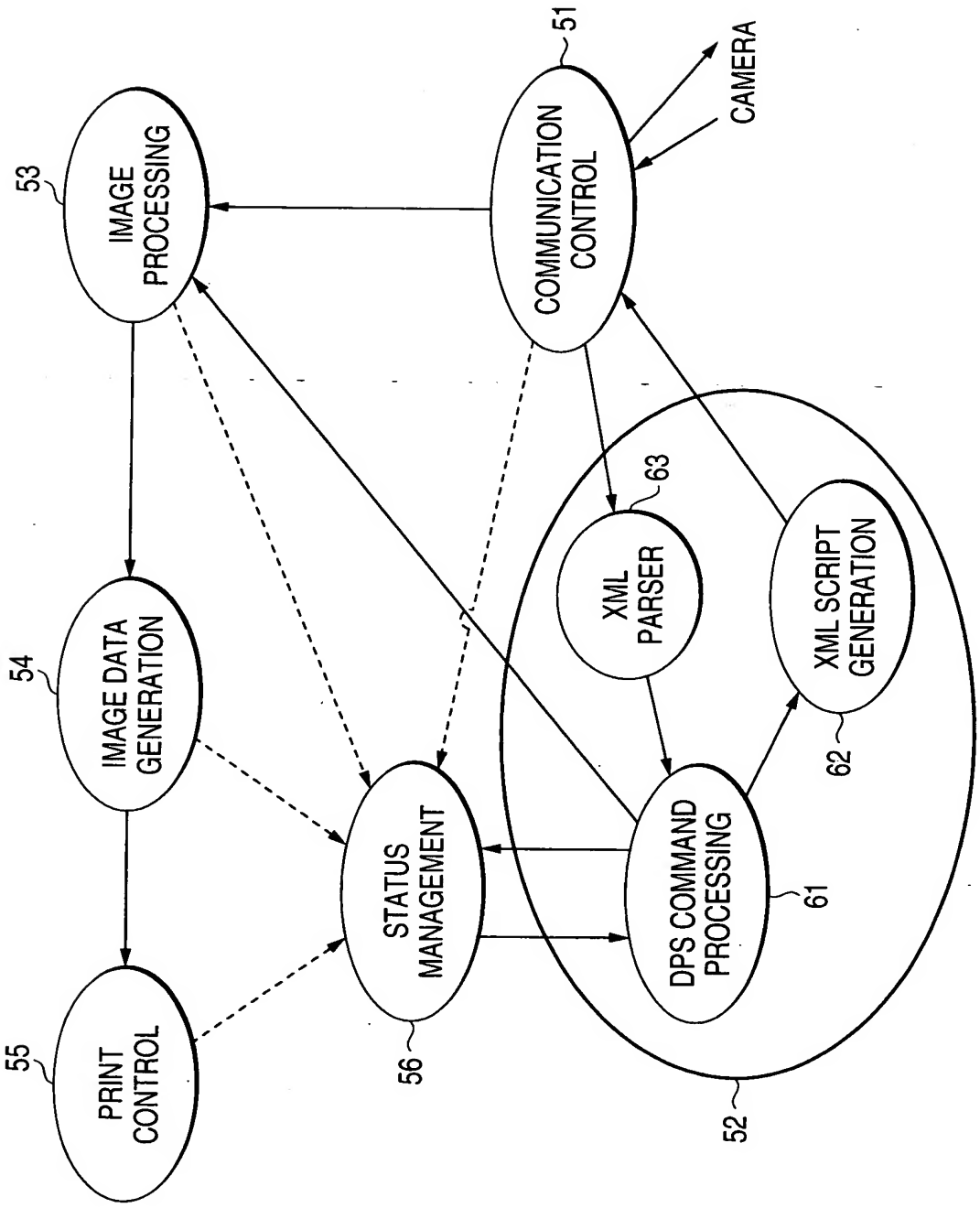


IMAGE PROCESSING
53
COMMUNICATION CONTROL
51
CAMERA
IMAGE DATA GENERATION
54
XML PARSER
63
XML SCRIPT GENERATION
62
STATUS MANAGEMENT
56
DPS COMMAND PROCESSING
61
PRINT CONTROL
55
52

FIG. 5

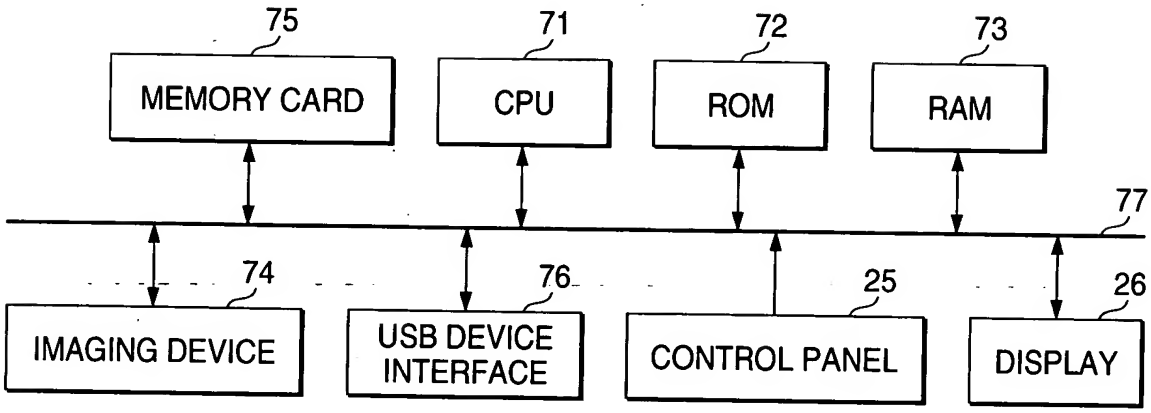

75
71
72
73
MEMORY CARD
CPU
ROM
RAM
77
74
76
25
26
IMAGING DEVICE
USB DEVICE INTERFACE
CONTROL PANEL
DISPLAY

FIG. 6

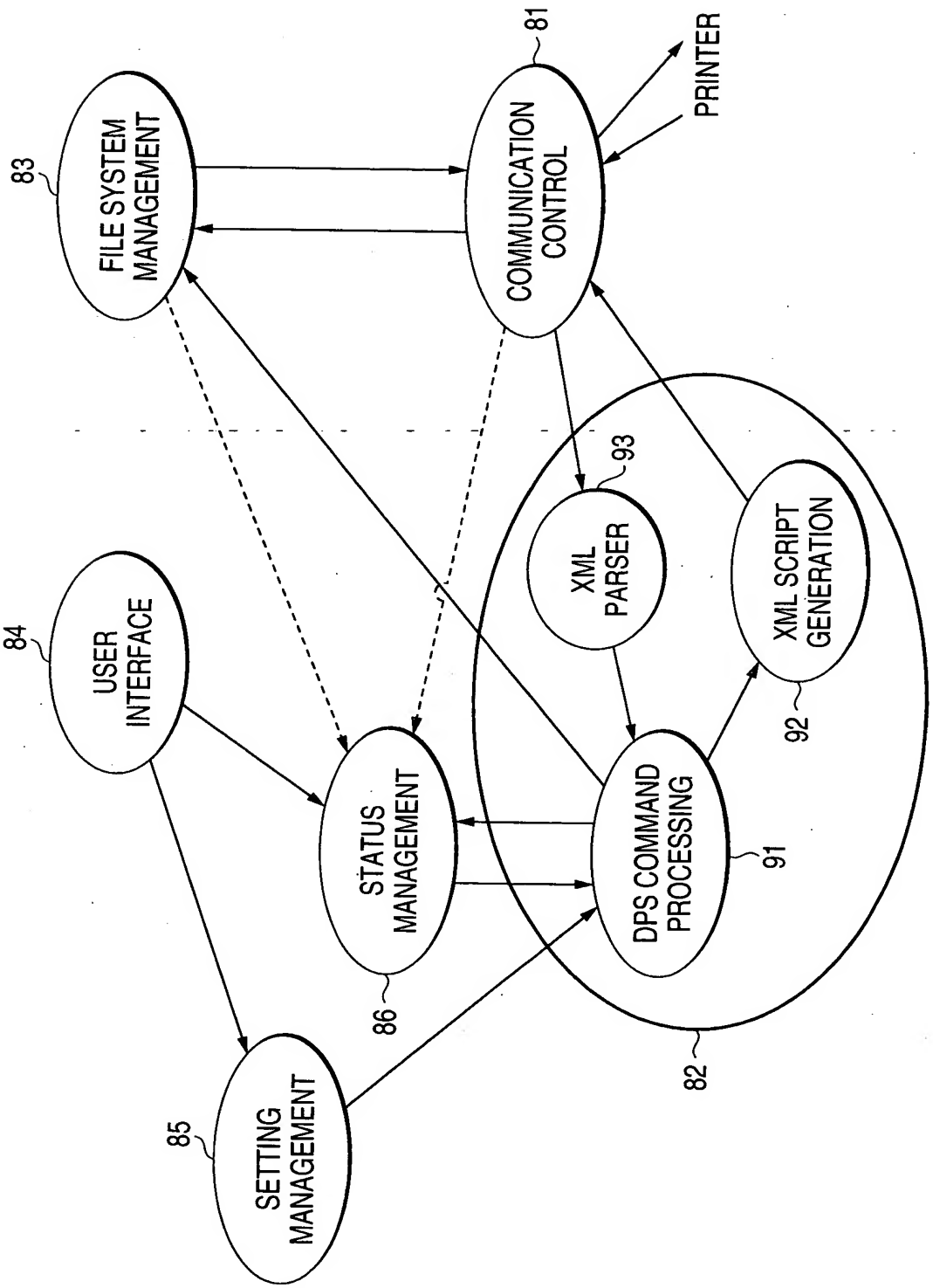

FILE SYSTEM MANAGEMENT
83
COMMUNICATION CONTROL
81
PRINTER
USER INTERFACE
84
XML PARSER
93
XML SCRIPT GENERATION
92
STATUS MANAGEMENT
86
DPS COMMAND PROCESSING
91
SETTING MANAGEMENT
85
82

FIG. 7

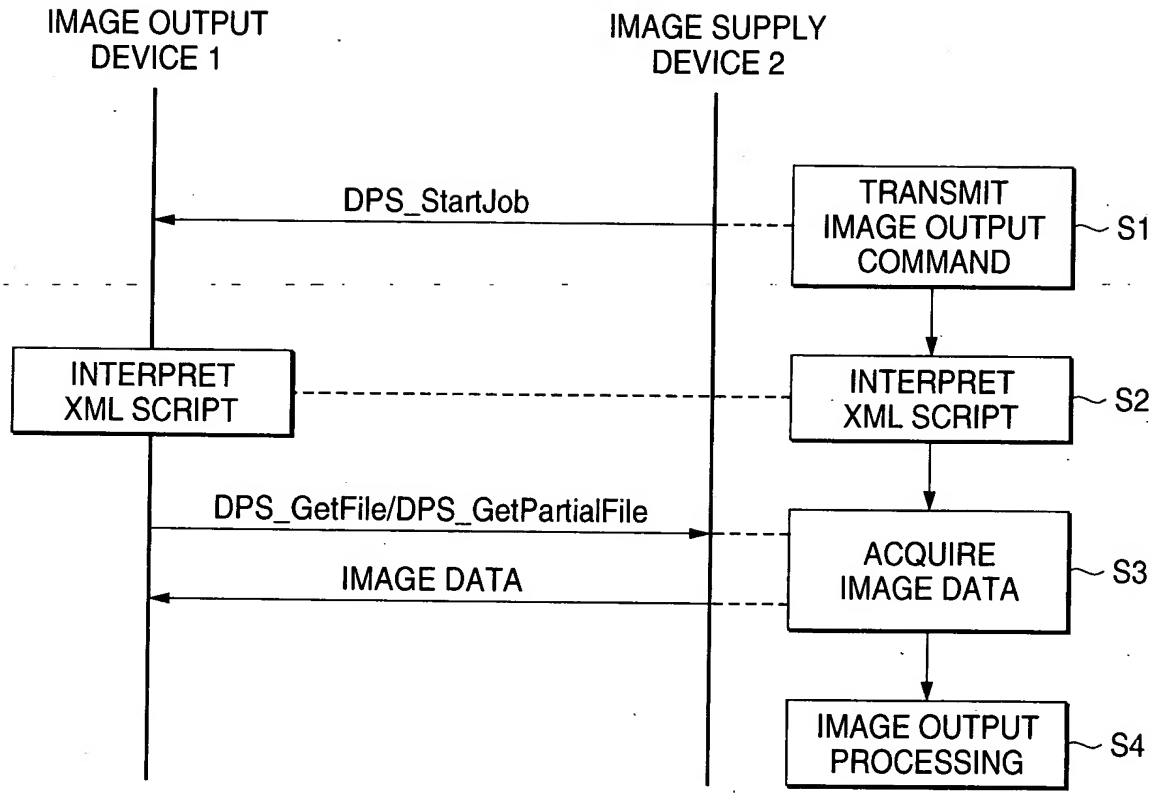


IMAGE OUTPUT DEVICE 1
IMAGE SUPPLY DEVICE 2
DPS_StartJob
TRANSMIT IMAGE OUTPUT COMMAND
S1
INTERPRET XML SCRIPT
INTERPRET XML SCRIPT
S2
DPS_GetFile/DPS_GetPartialFile
IMAGE DATA
ACQUIRE IMAGE DATA
S3
IMAGE OUTPUT PROCESSING
S4

FIG. 8

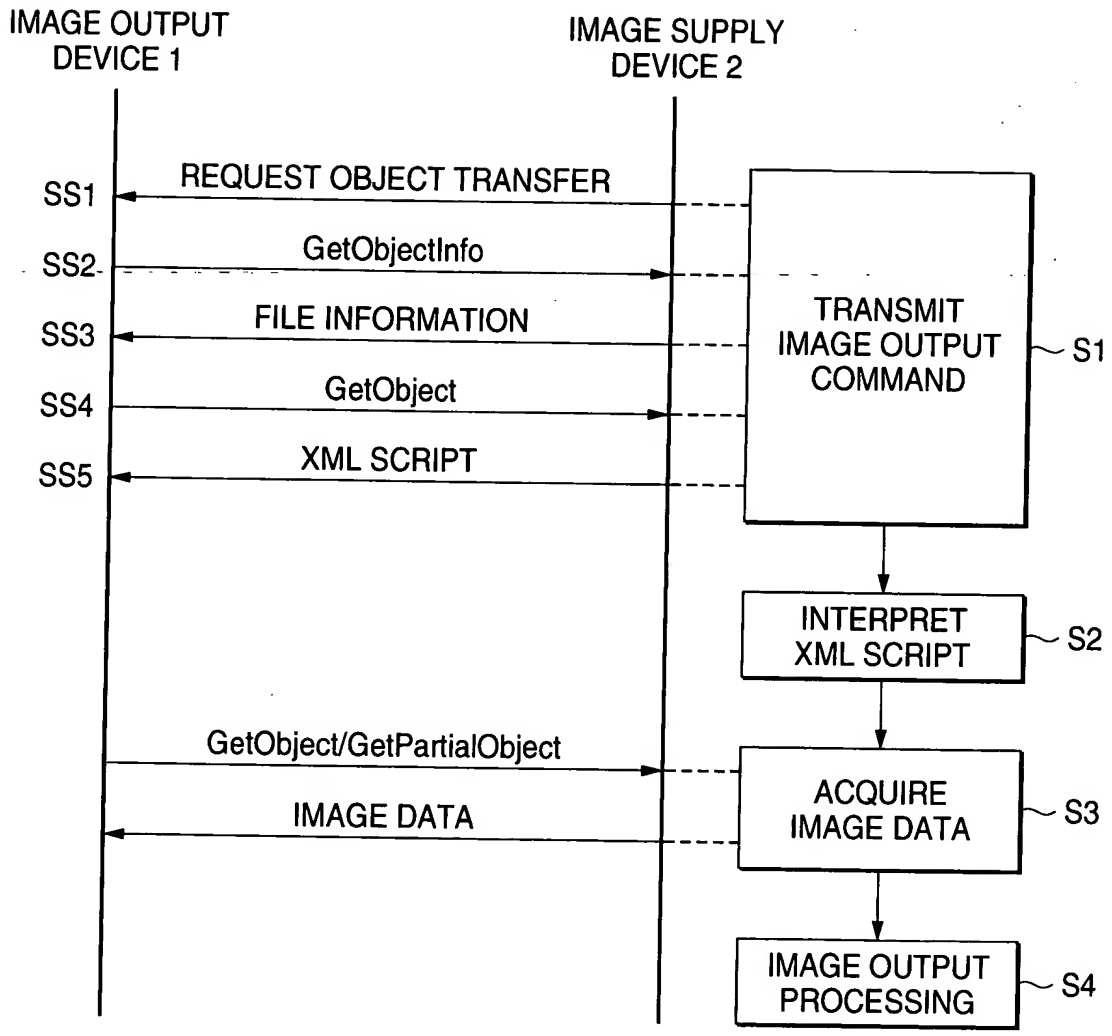


IMAGE OUTPUT DEVICE 1
IMAGE SUPPLY DEVICE 2
SS1
REQUEST OBJECT TRANSFER
SS2
GetObjectInfo
SS3
FILE INFORMATION
SS4
GetObject
SS5
XML SCRIPT
TRANSMIT IMAGE OUTPUT COMMAND
S1
INTERPRET XML SCRIPT
S2
GetObject/GetPartialObject
IMAGE DATA
ACQUIRE IMAGE DATA
S3
IMAGE OUTPUT PROCESSING
S4

FIG. 9

```
<?xml version="1.0"?>
<dps xmlns="http://www.xxxx">
  <startJobRequest>
    <job>
      <jobConfig>
        <quality>01000000</quality>
        <paperSize>02010000</paperSize>
        <paperType>03020000</paperType>
        <fileType>04150000</fileType>
        <date>05010000</date>
        <fileName>06000000</fileName>
        <imageOptimize>07000000</imageOptimize>
        <layoutItem>08010000</layoutItem>
      </jobConfig>
      <printInfo>
        <image>
          <imageID>00000001</imageID>
          <imageDate>2002/05/03</imageDate>
        </image>
      </printInfo>
    </job>
  </startJobRequest>
</dps>
```

FIG. 10

```
<?xml version="1.0"?>
<dps xmlns="http://www.xxxx">
  <GetFileRequest>
    <fileID>00000001</fileID>
    <buffPtr>00100000</buffPtr>
  </getFileRequest>
</dps>
```

FIG. 11

PRESET NUMBER	CONTRAST	BRIGHTNESS	COLOR BALANCE	SATURATION	SHARPNESS	MEMORIZED COLOR	NOISE REMOVAL	SUITABLE SCENE
1	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	OFF	OFF	NORMAL
2	SLIGHT SOFT	SLIGHT BRIGHT	NORMAL	SLIGHT LOW	SLIGHT WEAK	FLESH	OFF	PORTRAIT
3	SLIGHT HARD	NORMAL	NORMAL	SLIGHT HIGH	SLIGHT STRONG	SKY & GREEN	OFF	LANDSCAPE
4	NORMAL	DARK	OFF	NORMAL	SLIGHT WEAK	GREEN	ON	EVENING
5	NORMAL	DARK	OFF	NORMAL	NORMAL	OFF	ON	NIGHTVIEW
6	SLIGHT SOFT	SLIGHT BRIGHT	WEAK	SLIGHT HIGH	NORMAL	RED	OFF	FLOWER
7	NORMAL	NORMAL	WEAK	NORMAL	STRONG	OFF	OFF	MACRO
8	HARD	NORMAL	NORMAL	SLIGHT HIGH	STRONG	OFF	OFF	SPORTS
9	SLIGHT SOFT	BRIGHT	NORMAL	NORMAL	NORMAL	OFF	OFF	BACKLIGHT
10	NORMAL	NORMAL	NORMAL	HIGH	SLIGHT STRONG	RED	OFF	RED LEAVES
11	NORMAL	SLIGHT BRIGHT	NORMAL	NORMAL	SLIGHT STRONG	FLESH	OFF	MEMORIAL

FIG. 12

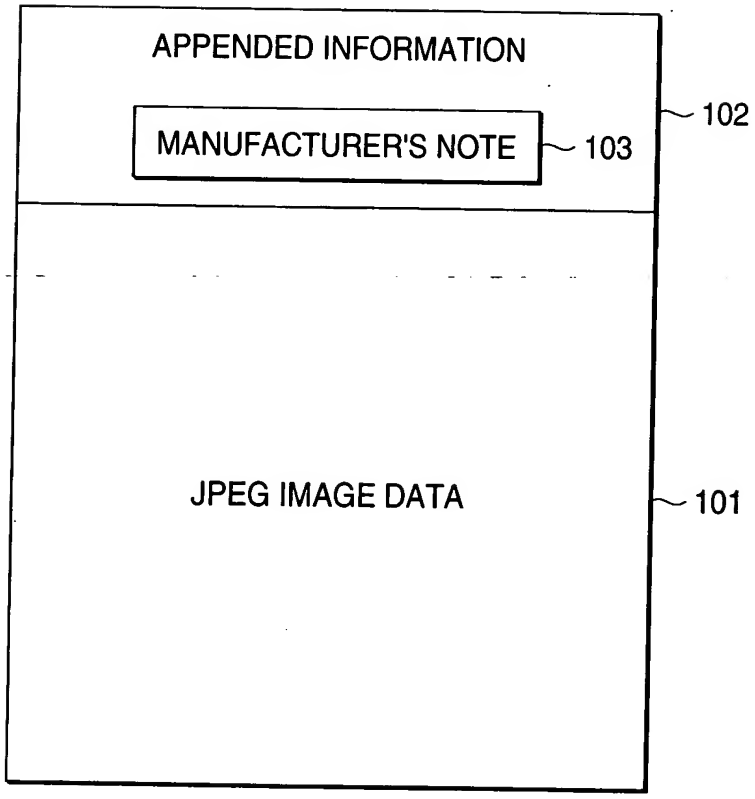

APPENDED INFORMATION
MANUFACTURER'S NOTE
103
102
JPEG IMAGE DATA
101

FIG. 13

OFFSET	DATA
0	MANUFACTURER NAME
6	RESERVED
8	ENTRY NUMBER N OF LOCAL TAG
10	FIRST LOCAL TAG
22	PRINT MATCHING
⋮	⋮
10 + 12 (N - 1)	N-TH LOCAL TAG

FIG. 14

OFFSET	DATA
0	PRINT MATCHING IDENTIFIER
8	PIM VERSION INFORMATION
12	RESERVED
14	ENTRY NUMBER N OF PARAMETER SETTING
16	FIRST PARAMETER NUMBER
18	FIRST PARAMETER SETTING VALUE
22	SECOND PARAMETER NUMBER
24	SECOND PARAMETER SETTING VALUE
28	THIRD PARAMETER NUMBER
30	THIRD PARAMETER SETTING VALUE
⋮	⋮
16 + 6 (n - 1)	n-TH PARAMETER NUMBER
18 + 6 (n - 1)	n-TH PARAMETER SETTING VALUE

FIG. 15

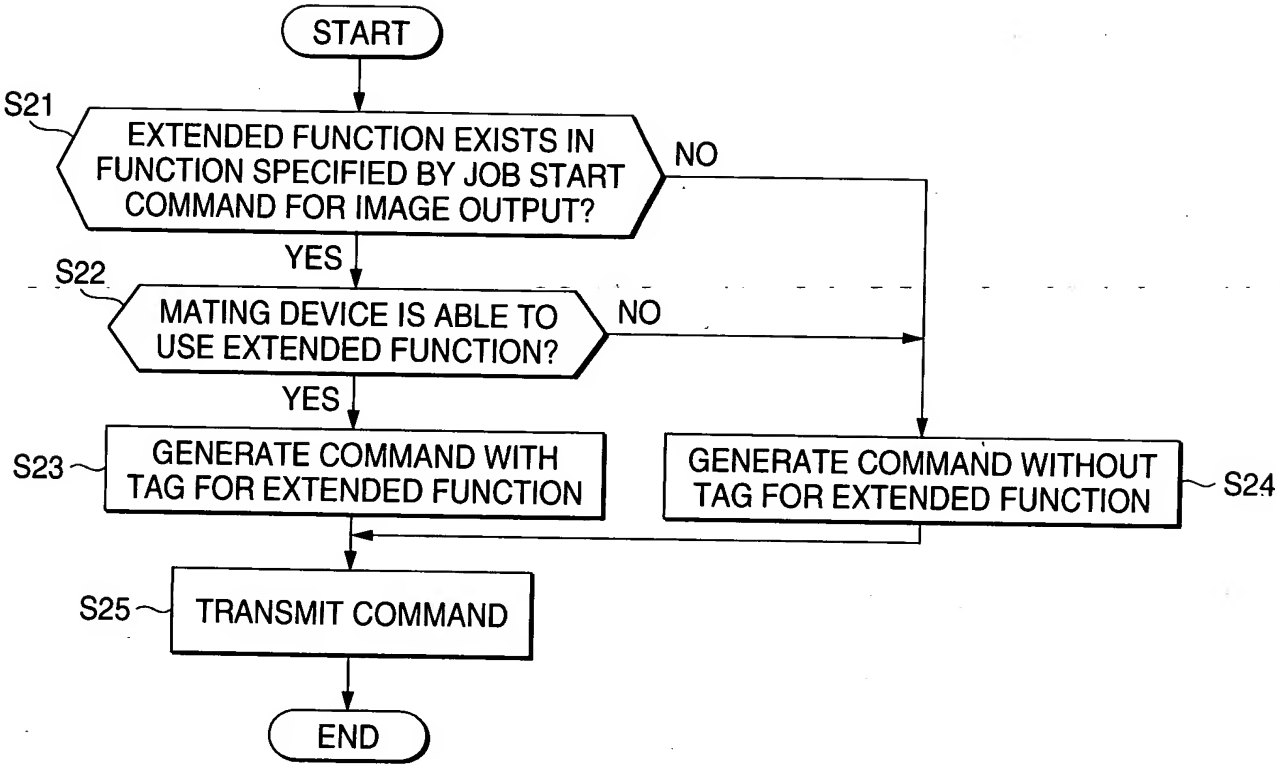

START
S21
EXTENDED FUNCTION EXISTS IN FUNCTION SPECIFIED BY JOB START COMMAND FOR IMAGE OUTPUT?
NO
YES
S22
MATING DEVICE IS ABLE TO USE EXTENDED FUNCTION?
NO
YES
S23
GENERATE COMMAND WITH TAG FOR EXTENDED FUNCTION
GENERATE COMMAND WITHOUT TAG FOR EXTENDED FUNCTION
S24
S25
TRANSMIT COMMAND
END

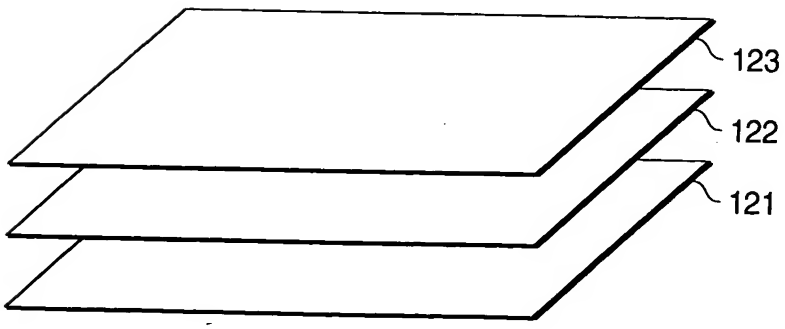
FIG. 16

```
<?xml version="1.0"?>
<dps xmlns="http://www.xxxx">
  <startJobRequest>
    <job>
      <jobConfig>
        <quality>01000000</quality>
        <paperSize>02010000</paperSize>
        <paperType>03020000</paperType>
        <fileType>04150000</fileType>
        <date>05010000</date>
        <fileName>06000000</fileName>
        <imageOptimize>
          07000000
          <imagdOptimize2>
            08000000
          </imageOptimize2>
        </imageOptimize>
        <layoutItem>08010000</layoutItem>
      </jobConfig>
      <printInfo>
        <image>
          <imageID>00000001</imageID>
          <imageDate>2002/05/30</imageDate>
        </image>
      </printInfo>
    </job>
  </startJobRequest>
</dps>
```

FIG. 17

```
<?xml version="1.0"?>
<dps xmlns="http://www.xxxx">
  <startJobRequest>
    <job>
      <jobConfig>
        <quality>01000000</quality>
        <paperSize>02010000</paperSize>
        <paperType>03020000</paperType>
        <fileType>04150000</fileType>
        <date>05010000</date>
        <fileName>06000000</fileName>
        <imageOptimize>07000000</imageOptimize>
        <layoutItem>08010000</layoutItem>
      </jobConfig>
      <printInfo>
        <image>
          <imageID>00000001</imageID>
          <imageDate>2002/05/30</imageDate>
          <imageOptimize2>
            08000000
          <imageOptimize2>
        </image>
      </printInfo>
    </job>
  </startJobRequest>
</dps>
```

FIG. 18



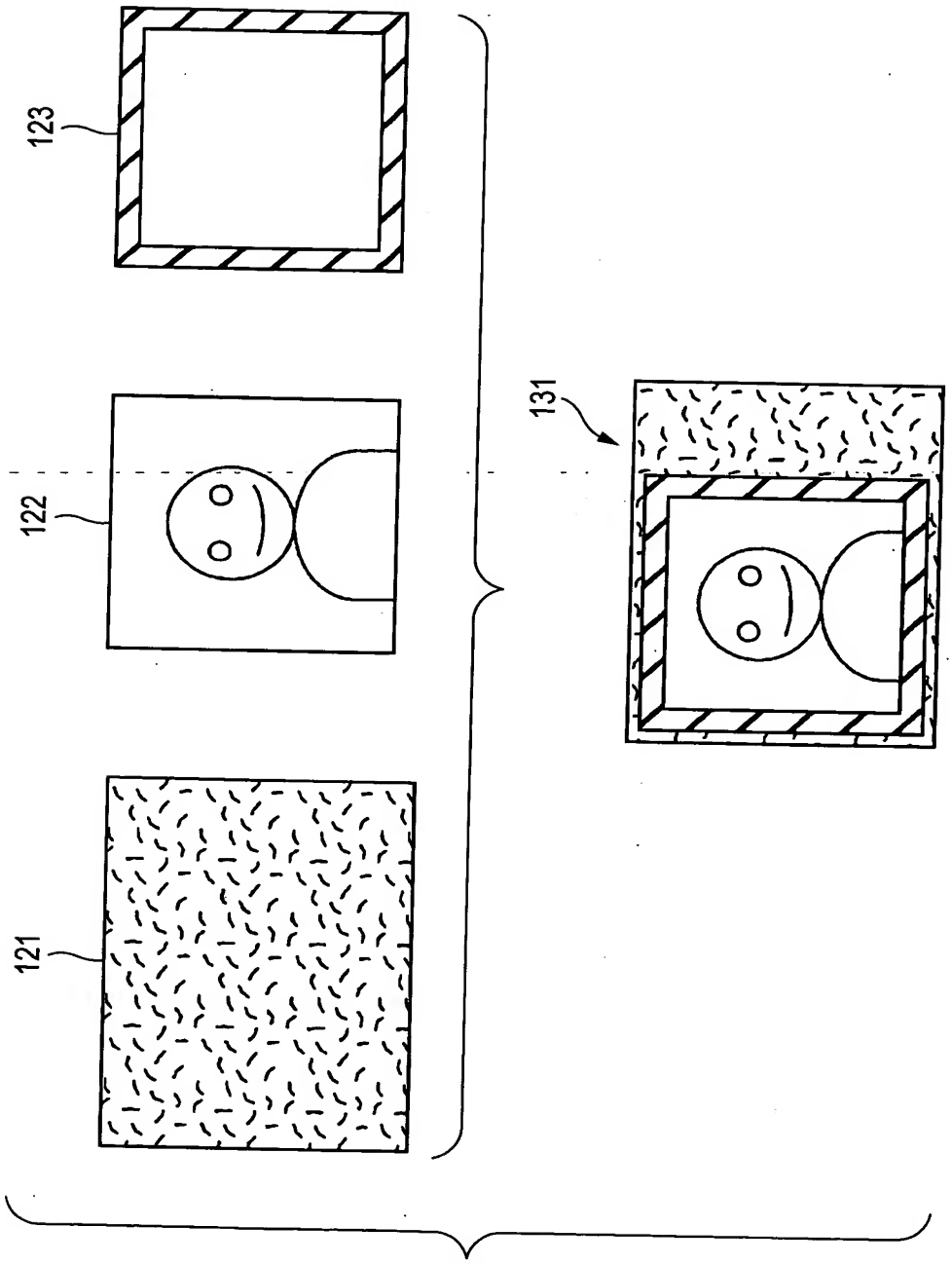


FIG. 19

FIG. 20

```
[HEADER]
HdRevision = 02.00
HdAuthor = "xxxx"
HdCopyright = "xxxx"
HdChangeFlag = Possible
HdKeyWord = "Christmas," "Greeting"
HdTitle = "SAMPLE"
HdComment = "SAMPLE"
HdDirection = Vertical
HdSound = "...EPUDL/GSOUND.PCM"
HdCapacity = 1024000
HdThumbnail = "..EPUDL/IMAGE/001UDL.USF"
HdPhysicalPaperSize = R89
HdMargins = 3,3,3,3

[PAGE]
Draw Picture ("",1,50,100,1500,1200,4,0,5)
Draw Picture ("..EPUDL/IMAGE/001.EFF",0,10,20,100,200,0,1,4)
Draw Strings ("..EPUDL/IMAGE/001.EFF",0,"%G.%d.%y",100,200,200,300,"Mincho",0,128,128,128)

Draw Line ( 10,  20,  10,200,5,255,0,0)
Draw Line (100,  20,100,200,5,255,0,0)
Draw Line ( 10,  20,100,  20,5,255,0,0)
Draw Line ( 10,200,100,200,5,255,0,0)
```

FIG. 21

```
<?xml version="1.0"?>
<dps xmlns="http://dps.org/version">
  <startJobRequest>
    <job>
      <capability name="Standard">
        <qualities>01000000</qualities>
        <paperSizes>
          <paperSizeItems>02010000</paperSizesItems>
          <paperSizeLink>00000010</paperSizeLink>
        </paperSizes>
        <paperTypes>03020000</paperTypes>
        <imageType>04000000</imageType>
        <dates>05010000</dates>
        <fileName>06000000</fileName>
        <imageOptimize>07000000</imageOptimize>
        <layout>
          <layoutItems>08010000</layoutItems>
          <layoutLink>00000011</layoutLink>
        </layout>
      </capability>
    </job>
    <printInfo>
      <image>
        <imageID>00000001</imageID>
        <imageDate>2002/05/30</imageDate>
        <imageLink>00000012</imageLink>
      </image>
    </printInfo>
  </startJobRequest>
</dps>
```